



  
**HalindaGreen**

Outdoor Classroom / Community Garden



Stephanie Alexander passionately believes that students will only develop positive attitudes towards a wide range of foods if they are introduced to the world of edible gardening, cooking and being with others around a table.

The aim of the Kitchen Garden Program is to pleurably engage and educate young Australians in growing, harvesting, preparing and sharing

delicious and healthy food in the belief that these skills and understandings are essential to the development of life long joyful and healthy eating habits.

## **Halinda Green Gardening Rules**

1. Walk and do not run in the garden
2. Carry tools safely (do not swing them and be aware of others around you)
3. Don't leave tools lying around (pack away when finished)
4. Listen carefully to instructions
5. Ask prior to picking anything in the garden to ensure it is ready to be harvested.
6. For the safety of the plants walk on the footpaths
7. Keep those gloves on!
8. Work as a team
9. Enjoy!

# So why grow Vegetables ?



- Your own grown vegetables taste much better and are fresher than any that you buy in the shops.

- Fruiting vegetables, like beans, tomatoes, capsicum and sweet corn, have the best flavour if they're eaten as quickly as possible after harvest



- leafy vegetables, such as lettuce, lose water and rapidly become limp, and all vegetables are more nutritious if they are consumed when as fresh as possible.

- Growing your own can save a considerable amount on food costs and will also give you a wider choice of vegetables.



Go for a walk around the garden and harvest something fresh that you can eat. Maybe you could taste test a fresh vegetable, a bought vegetable and a frozen vegetable to see which tastes the best.

(eg. beetroot tastes much better fresh than in a tin)

# The 3 very basic needs when deciding a position for a garden



Vegetables must have sun!

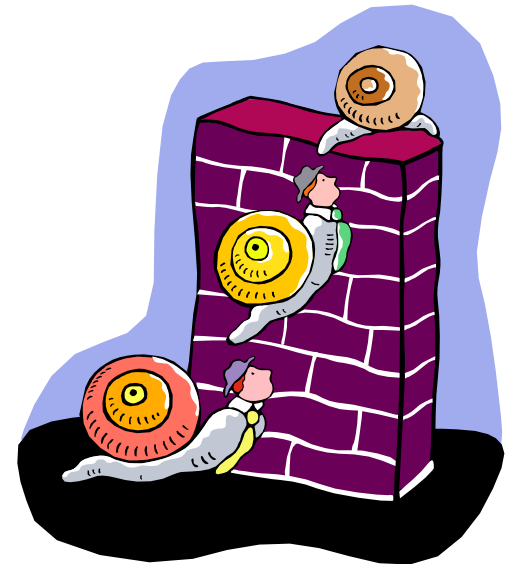
Try to select a growing area that is sunny for most of the day, is sheltered, and is close to a source of water.



**Sun 6hrs/day**



**Water**

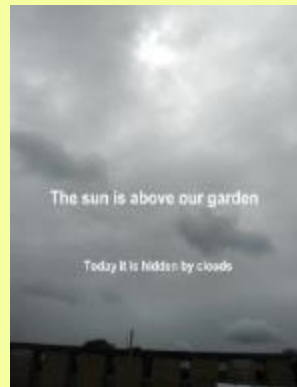


**Shelter**

# Does our garden have all it needs to flourish?



## sun



## water



## shelter





## **Watering**

Water thoroughly so that the entire root system of the plant is moistened. Thorough watering's are more effective than light sprinklings. Don't allow plants to reach wilting point but, conversely, don't flood them as this washes away nutrients and may cause drainage problems.



**We know we have water in the garden,**

**how do we make sure all the plants are watered all the time?**

# Why Soil is so important?

Soil is just as important as the air we breathe and the water we drink. Without the soil trees and plants could not grow, fungi could not survive and we would not be able to grow any food.

## So what exactly is soil?

Soil is created from dead plants, animals and different types of minerals. This creates a rich soil for feeding plants and in turn us. There are different types of clay and some plants favour each one or a mixture of them.

- Clay soils hold a lot of water and drain well.
- Sandy soils do not hold a lot of water and are not so good for growing plants.
- Loamy soils are somewhere in the middle and the perfect mix being great for growing plants.

Most fruits and vegetables like a loamy/clay soil because it has a lot of minerals that it can use as food.

Soil is a very important home for creatures that live underground like ants, worms and moles. Earthworms are very special because along with the fungi they have the job of recycling the autumn leaves and other matter into rich nutrients for the nearby plants.

The Earth works in layers and right at the top is the topsoil, topsoil is very important because it stores the most nutrients that the plants need. Most plants roots won't go much further than the topsoil because that is where most of the food is. Topsoil can easily be blown away by the wind and rain, this is a big problem because our green friends depend on it.

When soil is worked too much it gets too hard this leads to compaction. When a soil is compacted water runs off it when it rains. This is bad because we rely on the soil to absorb the water and when the soil cannot take it up it leads to flooding.

## What can we do to help?

If you have a garden do not, leave bare soil you can avoid this by

- Mulching
- Adding compost
- Growing more perennial plants
- Growing shrubby herbs around the base of fruit bushes and taller plants
- Plant lots of strawberries they cover the ground really well and taste delicious too

**The Soil Test** -To find out what type of soil you have in your plant pots or garden follow the next couple of steps

- Find some soil
- Put some water in the palm of one of your hands
- With the other hand pick up some soil and put it into the wet hand
- Make a ball by rolling the soil together
- If the soil is gritty falls apart you have a sandy soil
- If the some of the soil comes apart but the rest stays in a ball it is a loam soil
- If the soil is sticky and stays in a ball you have a clay soil





# Soil pH



## pH

pH is the level of acidity or alkalinity in the soil. Most vegetables produce best results if grown at a soil pH level of 6.0 to 7.0. In some areas this may mean adding lime before planting. Checking the pH level of the soil is recommended.

Go and test the soil ph. Is the level right?

Go and have a look at the soil in the garden. Try out the soggy soil experiment.

# Soggy soil experiment

Which soil drains quickest?

☐

Clay

☐

Sand

☐

Top soil

☐

Compost

What do you think will happen to the water?

Will it pass through quickly, slowly or not at all?

Can you describe what happens?

Which soil do you think is best for planting in and why?

## Mulching

Mulching over plants' root systems, preferably with an organic mulch, will retain moisture, suppress weeds, reduce temperature fluctuations, and prevent soil crusting.



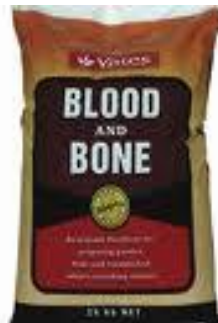
# Nutrients

Vegetables, more than most other plants, need to be supplied with adequate nutrients. Just like our bodies need the vitamins we get from eating vegetables. These nutrients are found in fertilisers.

Our garden at school is Organic. This means we only use natural methods to make our garden grow. Organic Fertilisers: are derived from once-living material. They're excellent for improving soil.

Some of the organic fertilisers we can use are

- Compost
- Dynamic Lifter organic pellets
- Seasol seaweed extract
- Fish Emulsion
- Blood and bone

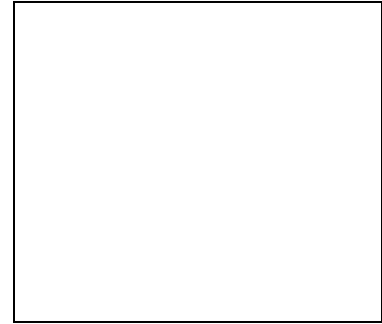


**How do we provide nutrients for our garden?**

# Making School Compost



This is the kitchen compost bin



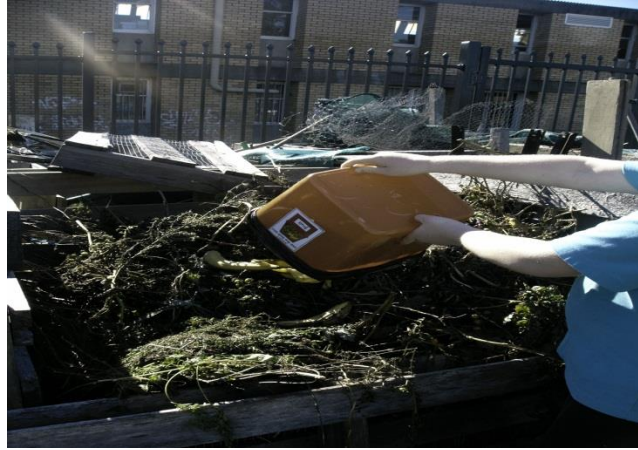
When we finish eating or cooking we can put these things in



These are the things we should **not** put in



When we go out to the garden we empty the bin into the compost heap.



It's a good idea to help the compost by using a garden fork to turn the heap

When the compost is all broken down we can use it for the garden to enrich the soil with nutrients.



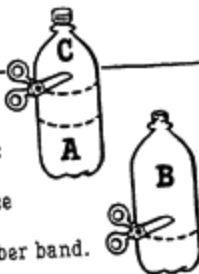
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# The Leaf-Decay Contraption

## What To Do

1. Cut and label the soda bottles like this:
2. Put the stocking piece over the spout of B. Secure it with a rubber band.
3. Set B, small end down, inside A.
4. Mix the leaves with the soil. Put the mixture inside B and gently pack it down. With the crayon, mark on B where the top of the mixture reaches.
5. Loosen the cap on C. Set C, spout down, inside B.
6. Pour the rain water into C. The water will drip through the loosened cap, the leaves and soil, and down into A.
7. Keep the Leaf-Decay Contraption in a warm place, but not in the Sun. Each day, pour the water from A into C.
8. At the end of a week, stir the mixture and pack it down. Mark the top of the mixture again. Do this for a month or longer, if possible.



What do you think will happen to the leaf and soil mixture?

Make a chart on the back of this sheet. Record what you observe each week.



You can watch this clip to learn about compost



Its+Gotten+Rotten video.mov

# Do we mulch our garden?

# Crop Rotation

v	<b>vines</b> Tomato, cucumber, pumpkin
p	<b>pod</b> s Peas, beans
r	<b>roots</b> Carrots, onions beetroot
g	<b>greens</b> Lettuce, broccoli, cauliflower, cabbage

It's important to avoid growing successive crops of the same type of vegetable in the same spot in the garden. This practice, which is called crop rotation, helps prevent build up of soil diseases. Seasonal crop changes often lead to natural crop rotation.

It is suggested we follow the table above. EG if we started with tomatoes we now need peas, then carrots, and end with lettuce. We can then replant tomatoes and the cycle stars again.

**Pick a garden bed and look at what is in it now  
and what should grow in it next**

# Companion Plants

**which plants like growing next to each other**

Plant friendships.

Imagine if you were stuck in the ground next to a plant that attracts bugs that eats your leaves etc.

Some plants love living next to each other, others have different soil types so don't really like living next to each other.

Plant flowers near fruit bushes/ trees and vegetables because they attract pollinating insects.

**Go for a walk around the garden and see which things are growing well together, and which ones are in the wrong spot.**



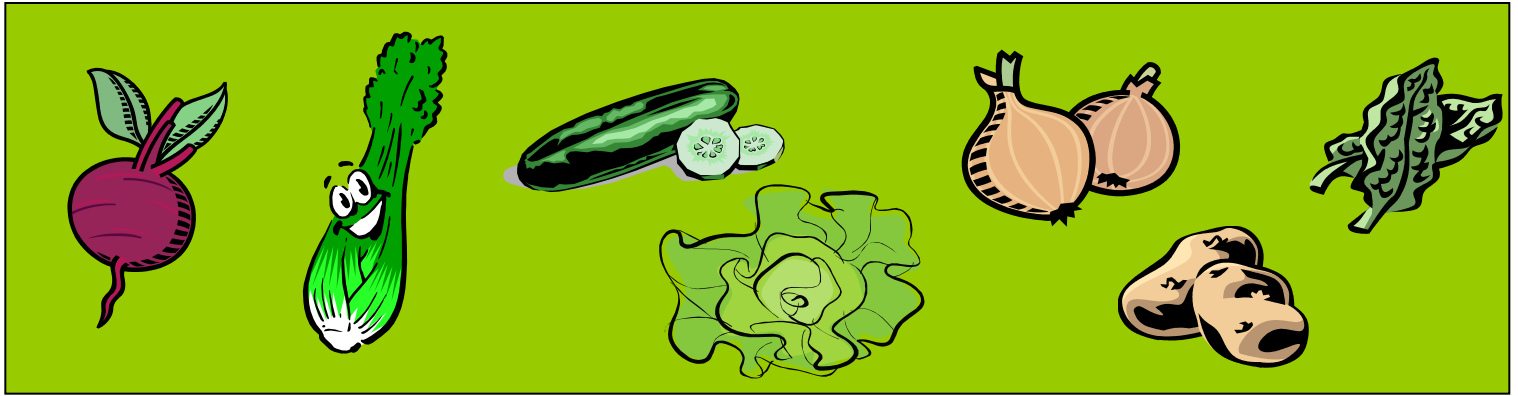
calendula



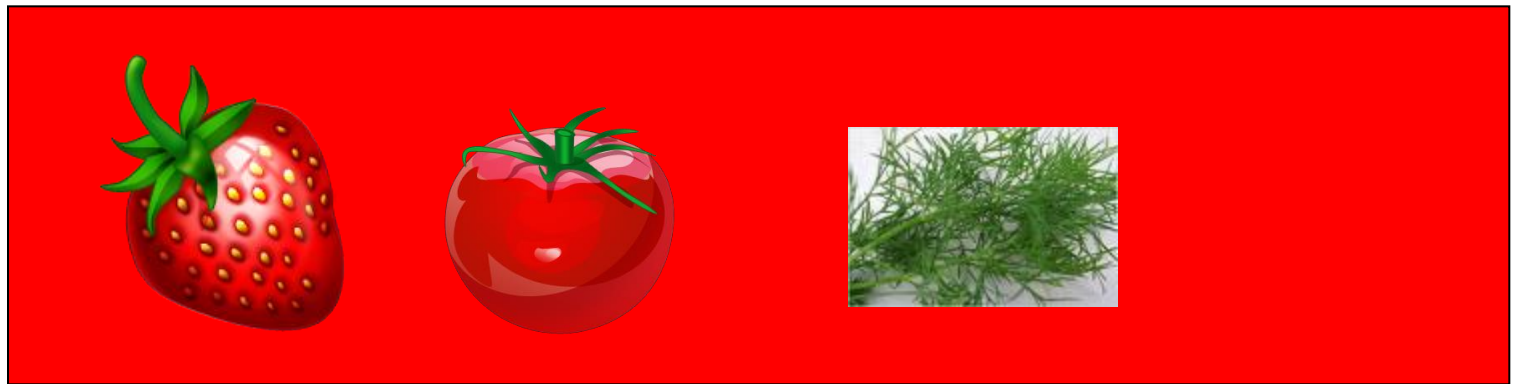
chamomile

# Cabbage family

Likes

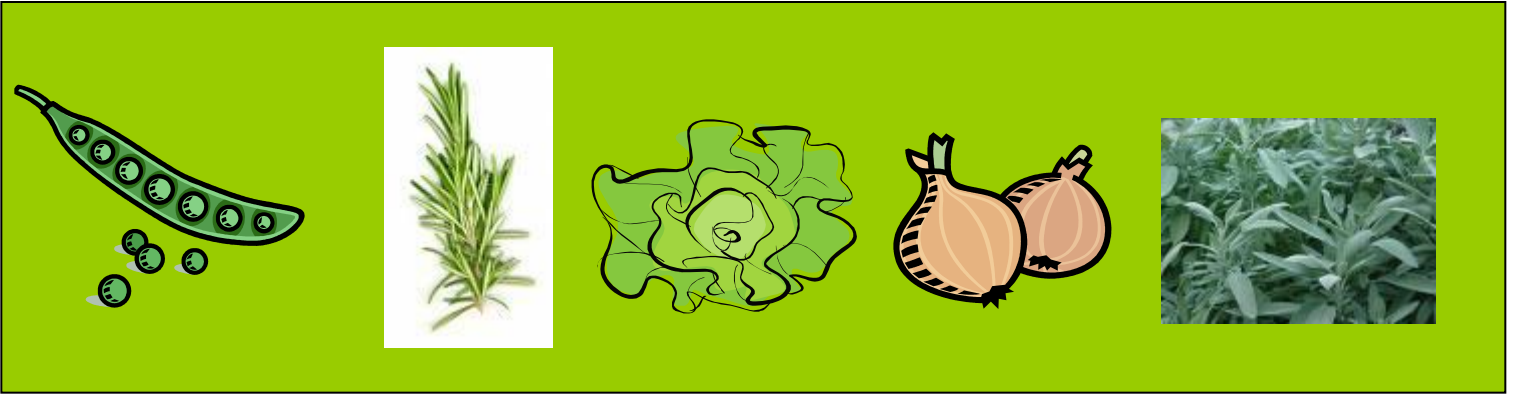


Dislikes

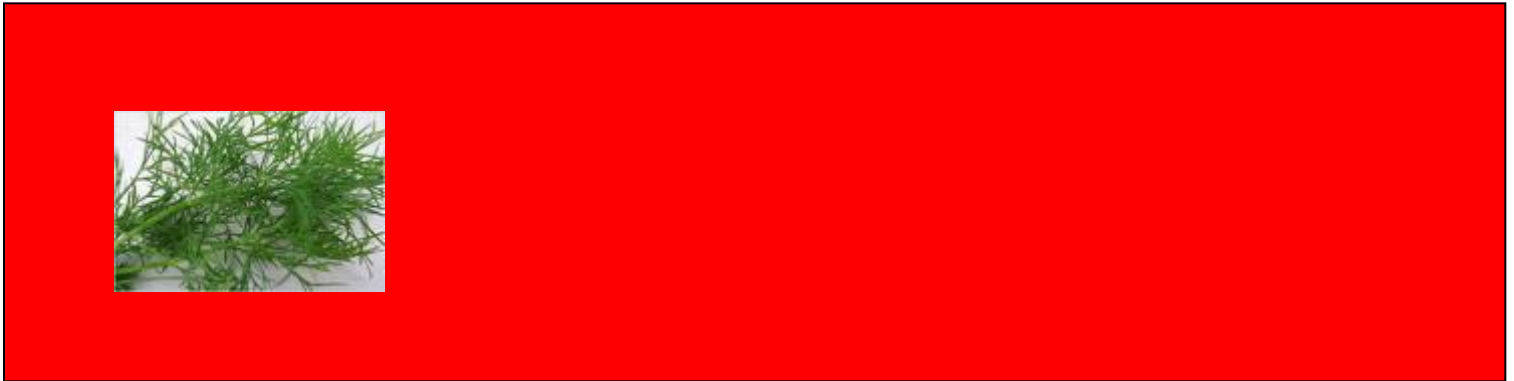


# Carrots

Likes



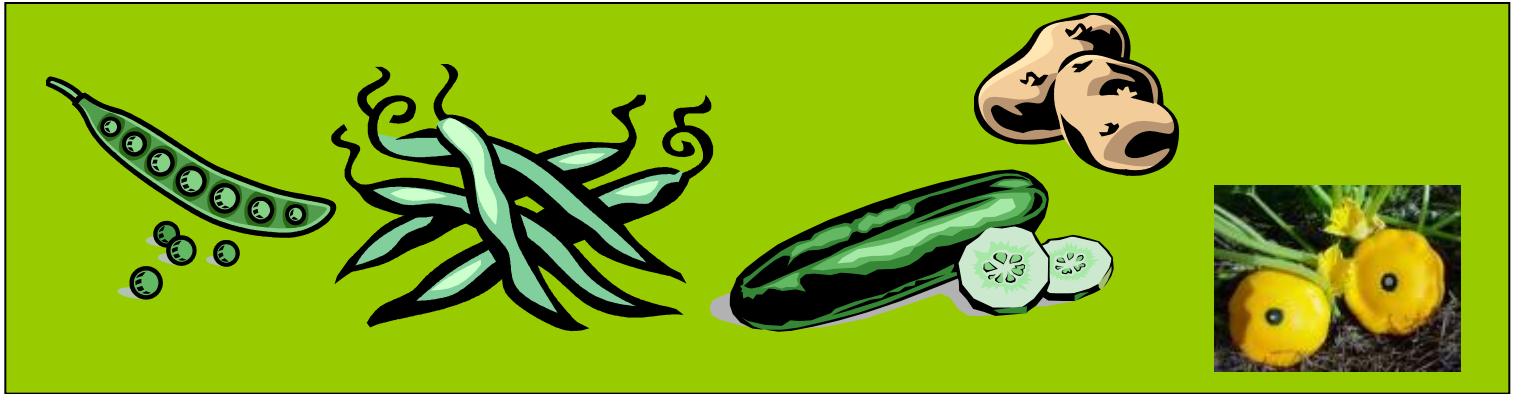
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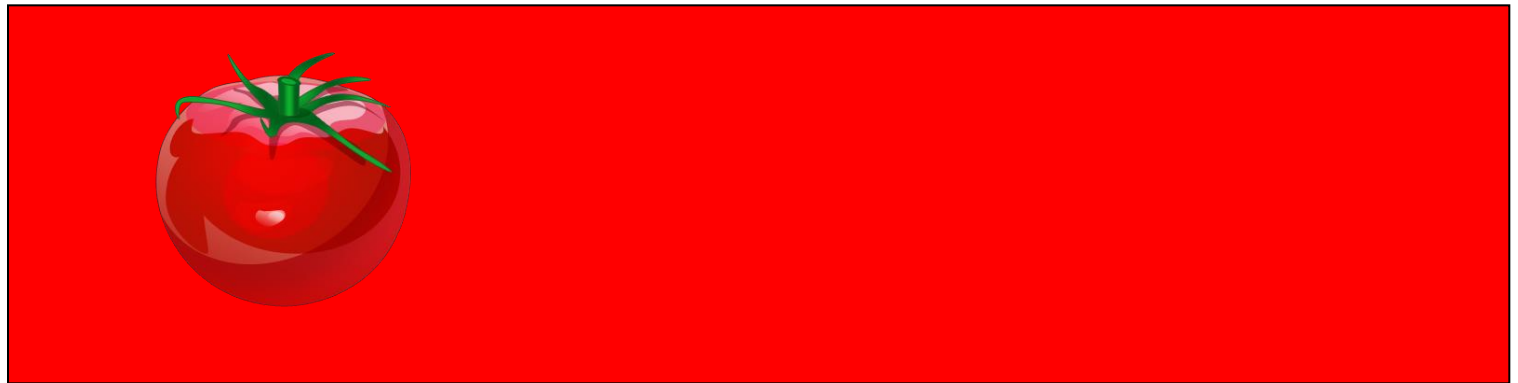


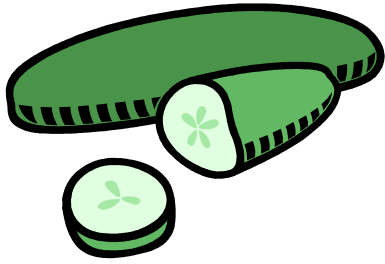
# Corn

Likes



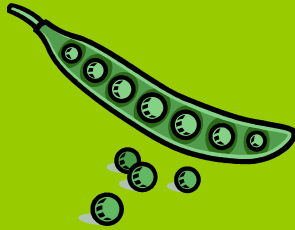
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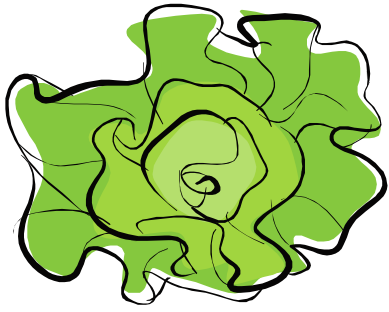
# Cucumbers

Likes



Dislikes



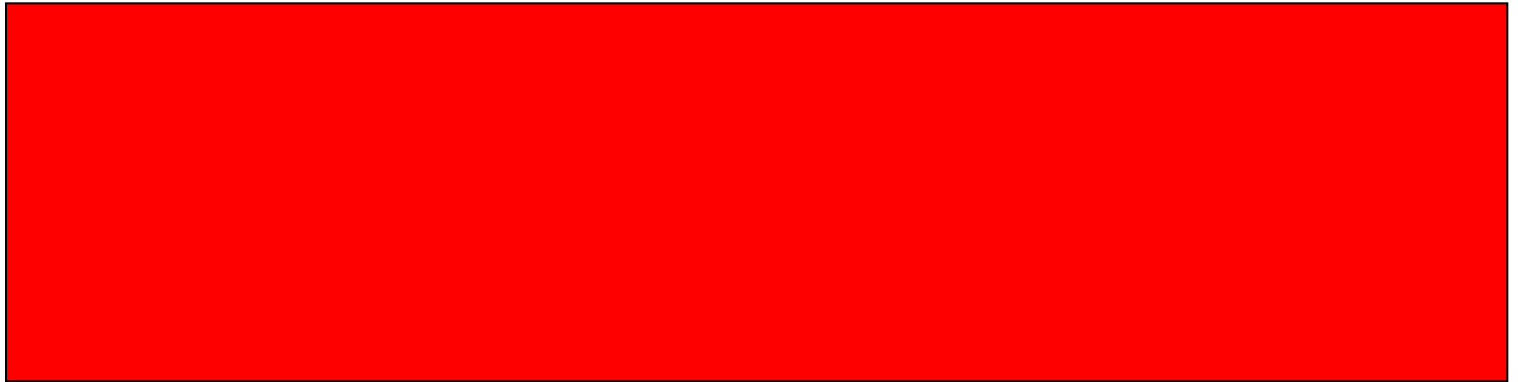


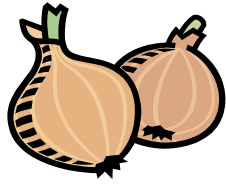
# Lettuce

Likes



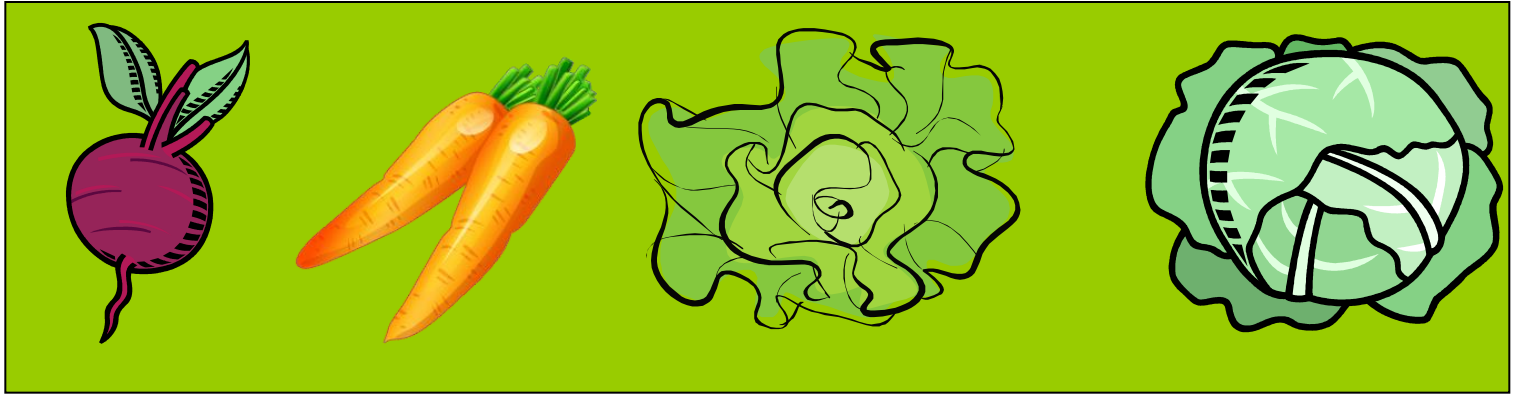
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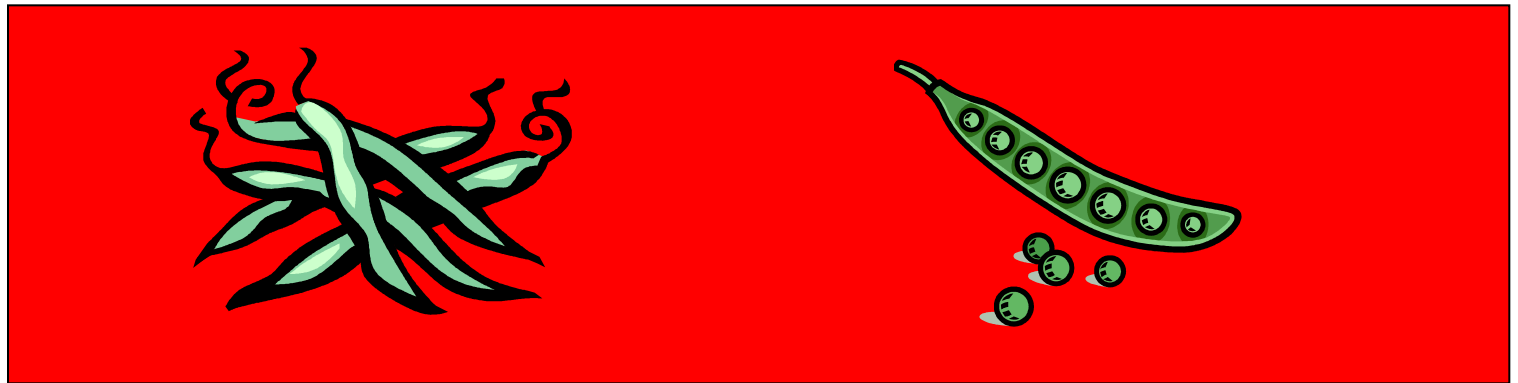


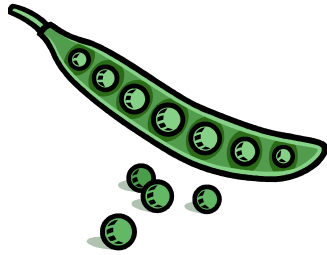
# Onion

Likes



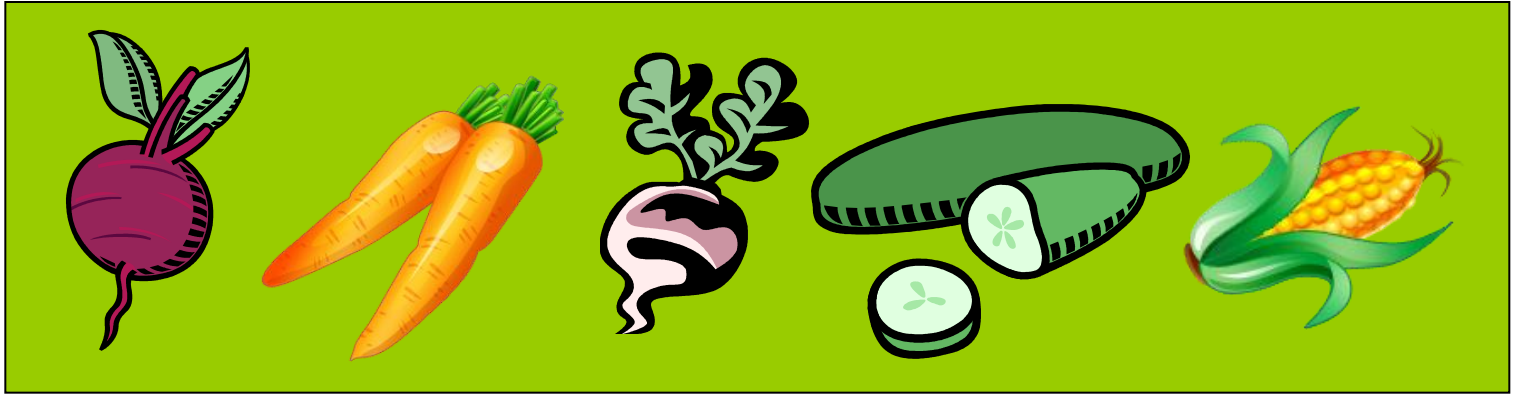
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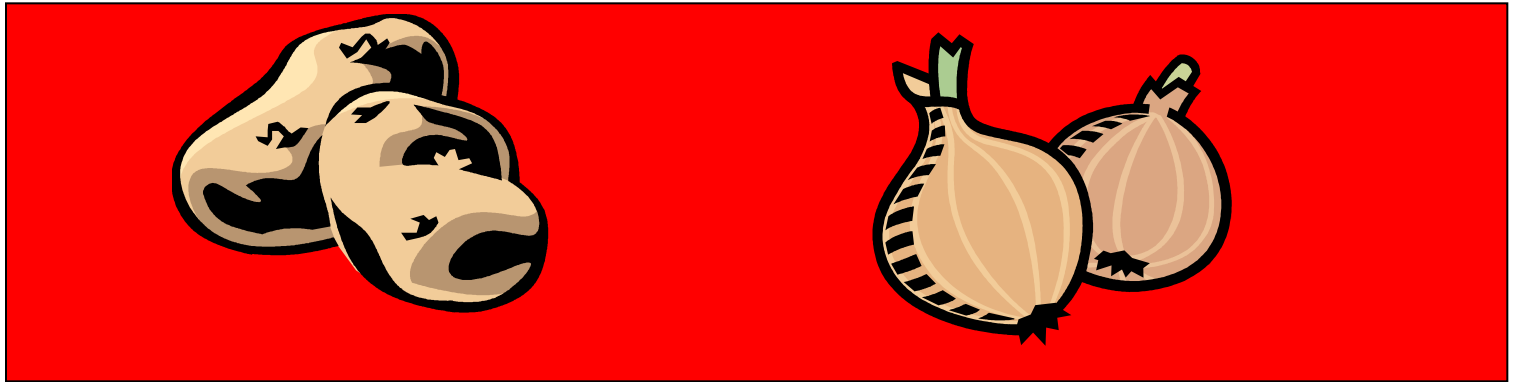


# Peas

Likes



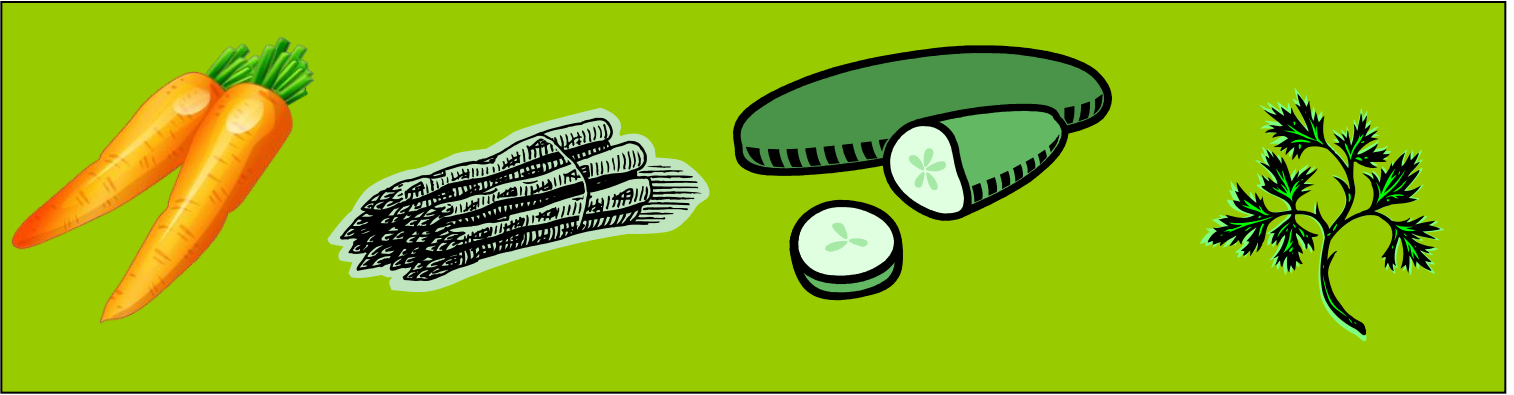
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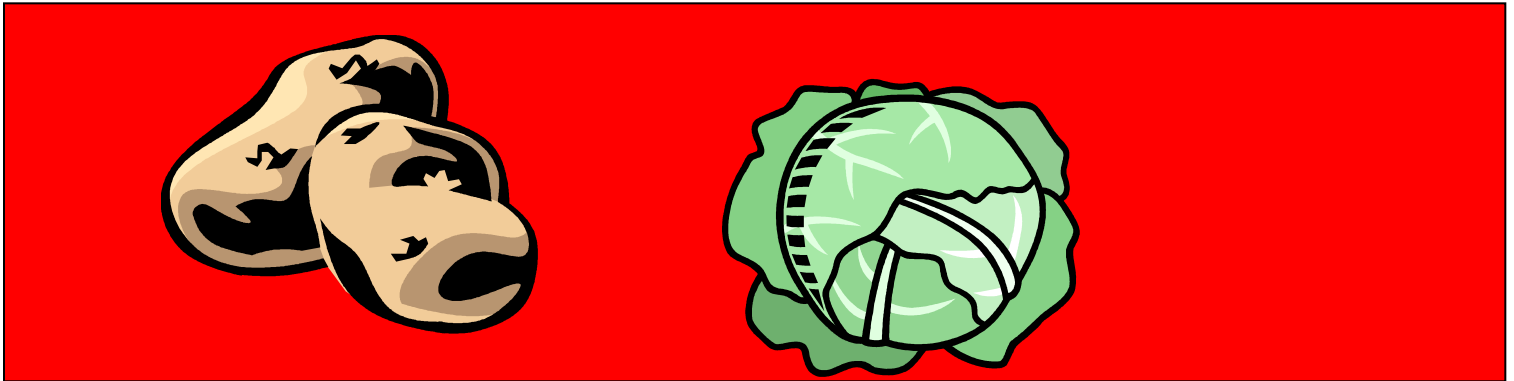


# Tomatoes

Likes

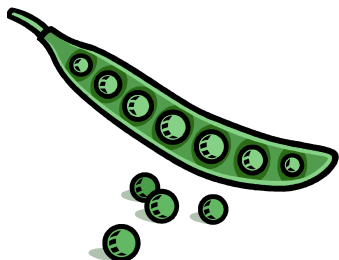
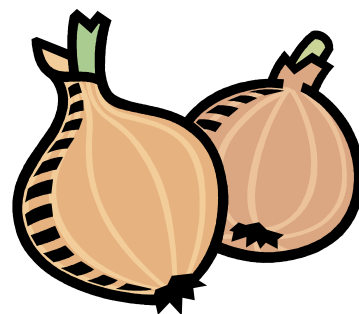
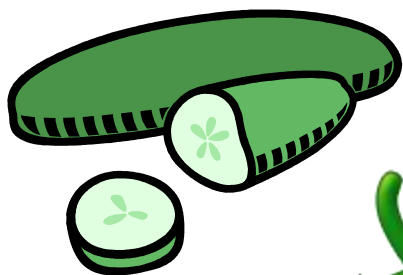
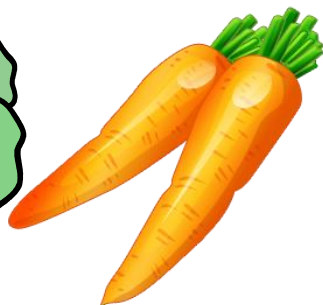


Dislikes



# Design a companion based garden bed





# When to grow vegies

Vegetables can be loosely grouped according to their growing season.

*Cool Season Vegetables:* Grow best when temperatures are between 10-20 degrees C or even lower.

They include: broad beans, broccoli, Brussels sprouts, cauliflower, onions, peas, spinach and turnips.

*Intermediate Season Vegetables:* These are best between temperatures of 15-25 degrees. Include: beetroot, carrot, parsnip, celery, leek, lettuce, radish, silver beet.

*Warm Season vegetables:* Are grown best when temperatures are above 20 degrees C. Include: Beans, capsicum, eggplant, potato, sweet corn, sweet potato, tomato and cucurbits (including cucumbers, zucchini, pumpkins etc.)

# What to grow when.

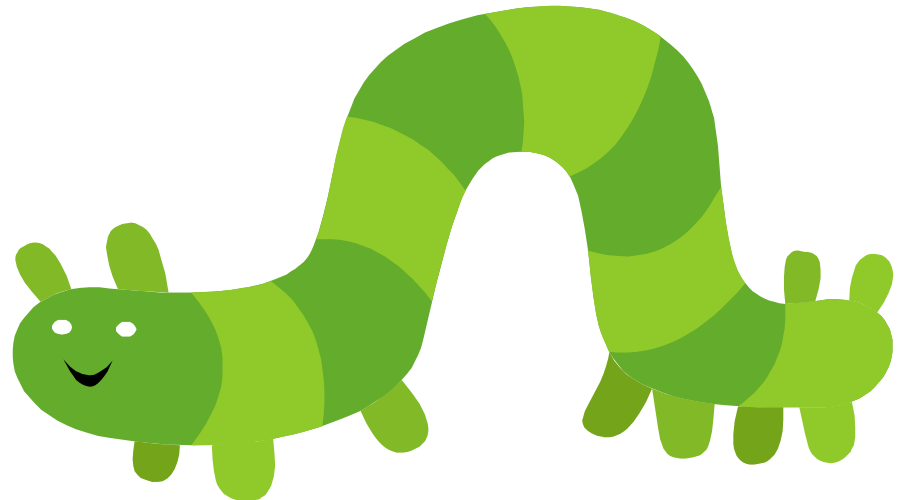
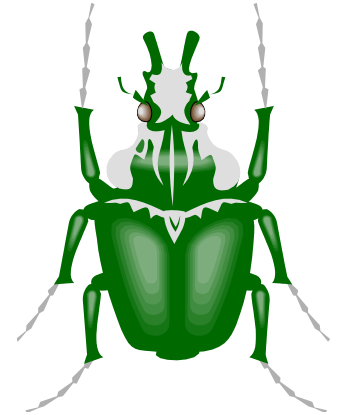
Warm season (term 4-2) (October-feb plant) (dec-may harvest)	All year	Cool season (term 1-3) (feb-sep plant) (may-dec harvest)
Tomato	Cabbage	Broccoli
Sweet corn	Carrots	Brussels sprout
Squash	Celery	Cauliflower
Egg plants	Leeks	Onions
Melons	Lettuce	Shallots
Capsicum	Parsnip	Peas
Cucumbers	Radish	Spinach
Potatoes	Beetroot	Turnips
Pumpkin	Silver beet	Broad beans
Beans		

# Once you have planted your garden you need to protect your crops

Hunt around the garden and find the pests that are hurting your plants.

Once you have located the pest look at ways to control them.

Try out some organic pest control and choose the one that is most effective for you.



## PEST OIL SPRAY

For those nasty pests around the garden try this great recipe tip that you can use as often as you like without the worry of harming your plants.

### **Ingredients**

- 1 whole clove of garlic
- ½ cup vegetable oil
- ½ cup water
- 1 paintbrush
- 1 glass cup

### **Method**

1. Boil the water and into the bowl. Crush the garlic clove and add it to the water. Leave to sit overnight, covering with a plate or lid.
2. The next day, strain out the garlic chunks.
3. Put vegetable oil and garlic water in the glass cup and mix them with the paintbrush. Apply garlic oil using the paintbrush or spray bottle.
4. You can stroke the trunks of tomato plants with an up-and-down motion, going as close to the ground as possible. This stops caterpillars and grubs getting to the plants.



## **WHITE OIL SPRAY**

Nothing's better than good old fashion organic white oil, and it works too! It is great to control whiteflies on your veggies, scale on the citrus and even aphids on your roses. If you notice weakening and discolouration in your plants, check under the leaves and spray any infested areas using Organic White Oil.

### **Ingredients**

- ½ cup vegetable oil
- 1 cup water
- 1 tablespoon natural soap (in flakes)
- 1 plastic spray bottle

### **Method**

Grate the natural soap into the spray bottle (to get soap flakes). Add the vegetable oil and water to the spray bottle. Give the bottle a good shake. Now you can start spraying on all your plants.

## **Facts about Favourite Vegies**

**Beans** – Available in dwarf or climbing forms, beans produce pods that are sliced or eaten whole. They must be grown during the warm season. Origin: Tropical America. Nutrition Value: Vitamin C, Vitamin A (beta carotene), iron, fibre and some protein.

**Beetroot**- The deep crimson swollen root of beetroot is cooked in stews and soups or cooled for salads. Its leaves can also be used as a vegetable. Origin: Southern Europe. Nutrition Value: Excellent source of folate.

**Brassicas** (cabbages, cauliflower, broccoli, Brussels sprouts) All grow better when temperatures are not too hot or too cold although new varieties are more heat tolerant. The introduction of Chinese cabbages and other oriental brassicas has encouraged new culinary uses for this group of vegies. Origin: Europe and Asia. Nutrition Value: Vitamin A, Vitamin C, mineral salts, fibre, protein.

**Broad Beans**- Grow on upright bushes during the cooler time of year. The whole pod can be eaten when young or (more commonly) the seeds are removed and cooked. Origin: Prehistoric Europe and ancient Egypt Nutrition Value: High in carbohydrates, fibre, minerals, Vitamin A and Vitamin C

**Carrot** – A root vegetable that is traditionally bright orange in colour. Must be grown in well-drained, friable soil that is free of stones, fresh manure or fertiliser. Origin: Europe. Nutrition Value: Potassium, carotene (Vitamin A), Vitamin C and fibre.

**Cucurbits**- Includes vine plants such as pumpkin, cucumber, zucchini, melons. They must grow during warm season and almost all have separate male and female flowers. Only the females produce fruit. Origin: Tropical America and the Orient. Nutrition Value: Vitamin C, minerals and fibre.

**Lettuce**- The most popular salad plant in the world, lettuce is grown for its crisp green leaves. Butterhead lettuce has soft, buttery leaves; crisphead or iceberg have firm, solid hearts; cos has upright, loose leaves. Origin: Mediterranean. Nutrition Value: Carotene (Vitamin A), Vitamin C, fibre.

**Onions**- Onions are bulbs with a pungent flavour. The bulb develops in response to day length and correct sowing times are critical for onions. Origin: Central and Western Asia. Nutrition Value: Vitamin C, calcium.

**Peas**- The pea is a legume that is grown for its pods or for the seeds they contain. For many centuries peas were eaten only in their dried form but the fresh pea has a sweet, pleasant flavour. Available in dwarf or climbing forms. Origin: Asia and North Africa. Nutrition Value: Protein, fibre, Vitamin A, Vitamin C, mineral salts. One of the most nutritious vegetables.

**Potatoes**- The underground tuber of a warm season plant that is now one of the world's staple foods. Easily grown in the home garden but needs plenty of room. Origin: South America. Nutrition Value: Protein, Vitamin C, carbohydrate and fibre

**Sweet Corn** – A warm season cereal that is grown for its sweetly flavoured seeds, sweet corn grows on a tall plant. The seeds must be pollinated by pollen falling from the tassel at the top of the plant. Origin: South America. Nutrition Value: Vitamin C, fibre, minerals and protein.

**Tomatoes** – A warm season fruiting vegetable that is popular both in salads and cooked dishes. Fresh tomatoes are best eaten at room temperature. Origin: South and Central America. Nutrition Value: Vitamin A, Vitamin C, fibre and protein.